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Cancer Undergraduate Fellowship Program

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CONTRACTING ORGANIZATION:
Georgetown University
Washington, DC, 20057

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14. ABSTRACT The training grant has two goals. The first goal is to integrate the students from Hampton University (HU) into the Prostate Center through research, lectures, seminars, and clinical exposure. The second goal is to attract talented HU students into the graduate prostate cancer program at GU. To achieve these goals, the training program is divided into two parts. Part I (8-12 weeks) consists of a mentored summer research experience at GU in the laboratory of a training faculty and attendance of lectures, seminars, and journal club. Attendance on clinical rounds and at clinical conferences on prostate cancer allows the trainees to follow prostate cancer patients through treatment. In addition, the trainees attend the weekly graduate school preparation session and are scheduled to take the GRE general and subject tests. During the academic year, part II consists of an educational and research component that enhances the prostate cancer training of the students through enrollment in HU BIO408 – Research Problems. During the first year of funding, four students from HU conducted research on the mechanism of action of novel drugs that sensitize prostate tumors to radiation treatment; on the role of metals in the activation of the androgen receptor; differences in protein signatures of prostate cancer cells from African and European Americans; and the status of PTEN gene deletion and expression and TMPS22 translocations in conditionally re-programmed prostate cancer cell lines. The students are currently enrolled in the Research Problems course and scheduled to take the GRE exam.					
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INTRODUCTION

The Lombardi Cancer Center (LCC) at Georgetown University (GU) is a National Cancer Institute designated Comprehensive Cancer Center. The Prostate Center at LCC is a multidisciplinary clinic where physicians and scientists interact to advance state-of-the-art treatment of patients with the goal of curing prostate cancer and maximizing quality of life. Urological surgeons, radiation oncologists, population scientists, medical oncologists, patient advocates, and basic scientist work together to develop clinical protocols that translate laboratory and technical discoveries to the clinic. Scientists at the Prostate Center are working to discover the molecular causes of prostate cancer and the population-wide impact of the disease. Their research is grouped into several thematic areas including prevention, detection and diagnosis, advancing treatment, and survivorship. Hampton University (HU), founded in 1869, is a dynamic, progressive institution of higher education that is a privately endowed, non-profit, non-sectarian, co-educational, historically black university. The Department of Biological Sciences has over 400 students and offers both the B.Sc and M.Sc. degrees. The Department is second among HBCU's in the number of B.Sc. degrees granted and is ranked nineteenth among all schools in the U.S. The Department boasts a 100% retention rate. The training grant has two goals. The first goal is to integrate the students from Hampton University into the Prostate Center through research, lectures, seminars, and clinical exposure. The second goal is to attract talented HU students into the graduate prostate cancer program at GU. To achieve these goals, the training program is divided into two parts. Part I (8-12 weeks) consists of a mentored summer research experience at GU in the laboratory of a training faculty and attendance of lectures, seminars, and journal club that provides a comprehensive scientific foundation in prevention, etiology, and initiation of prostate cancer through the progression and metastasis of the disease. Attendance on clinical rounds and at clinical conferences on prostate cancer allows the trainees to follow prostate cancer patients through treatment. In addition, the trainees attend the weekly graduate school preparation session and are scheduled to take the GRE general and subject tests. During the academic year, part II consists of an educational and research component that enhances the prostate cancer training of the students through enrollment in HU BIO408 – Research Problems. This class consists of seminars/lectures given, in part, by the GU training faculty. In addition, the HU faculty oversee a prostate cancer research project that addresses the epidemiological link between environmental exposures and an increased risk of developing prostate cancer.

KEY WORDS: prostate cancer, undergraduate training, underrepresented minorities

OVERALL PROJECT SUMMARY

During the first year of funding, we successfully recruited four very talented undergraduate from Hampton University to spend the summer participating in prostate cancer research at Georgetown University. In addition to working on research projects, the students participated in seminars and prepared to take the GRE exam. The students are currently enrolled in the Research Problems course at Hampton and registered to take the GRE exam this semester.

Aim – Foster collaborations between Georgetown University and Hampton University that will lead to the recruitment of Hampton University undergraduate students into the prostate cancer training program at Georgetown University Medical Center.

Task 1. Recruitment of Hampton University undergraduate students:

A. Recruitment:

1. Dr. Kenney recruited four second and third year undergraduate students from the Department of Biological Sciences at Hampton University for the summer of 2014. The students included Shannon Anderson Fionna LaNese Davis Myron Gilbert Ashton Green.

B. Selection:

1. The students were selected based on their research interests, overall and science GPA, and letters of recommendation.

Task 2. Placement of Hampton University undergraduate students in Georgetown University mentor's laboratory:

1. Based on their research interest, the Hampton students identified potential mentors in the GUMC prostate program.
2. Potential Georgetown University mentors were then contacted. Hampton University students were also be given the contact information of undergraduate, graduate, and postdoctoral trainees in the mentor's laboratory and encouraged to contact the mentor's trainees.

Task 3. Georgetown University provided a summer research and training program for Hampton University undergraduate students:

1. The Hampton University undergraduates (Shannon Anderson Fionna LaNese Davis Myron Gilbert Ashton Green) conducted prostate cancer research (8 - 12 weeks) in the laboratory of a Georgetown University mentor (Drs. Blancato, Dritshcilo, Martin, and Albanese).
2. Hampton University trainees participated in and presented their research at weekly laboratory research data meetings.
3. The trainees attended the weekly Brown Bag Lunch Lecture.
4. The trainees also attended Oncology Grand Rounds, the weekly Oncology Journal Club and Seminar, and the weekly Oncology Faculty Seminar.
5. Trainees attended a weekly graduate school preparation session and are scheduled to take the GRE general and subject tests in the fall of 2012. The trainees from the summer of 2014 will take the tests in the fall of 2014.

Task 4. Georgetown University faculty participated in teaching the Hampton University undergraduate course HU BIO408 – Research Problems:

1. Hampton University undergraduate students who participated in the summer of 2014 are currently enrolled in HU BIO408 Research Problems. Dr. Kenney's HU408 course presents various aspects of clinical and basic cancer research in a lecture format (50 minutes).

Task 5. Hampton University faculty advisor provided prostate cancer research opportunities for the undergraduate trainees:

1. The Hampton University faculty advisor, Dr. Kenney, is providing in vitro prostate cancer research opportunities during the academic year for the undergraduate trainees via enrollment in HU BIO408 Research Problems.

Task 6. Georgetown University faculty provided continuing prostate cancer summer research opportunities for Hampton University undergraduate trainees:

1. Two of the Hampton students plan to return to Georgetown during their winter break to continue their research projects.

Task 7. Georgetown University will continue to track the career progress of the Hampton University undergraduate students:

1. The career progress of the Hampton University students is being tracked by the Office of Cancer Research Education of the Lombardi Comprehensive Cancer Center of Georgetown University. Currently, the students are seniors at Hampton University and are expected to graduate in May 2015.

CONCLUSIONS - nothing to report

PUBLICATIONS, ABSTRACTS, AND PRESENTATIONS

Shannon Anderson presented a poster describing her research at the National Association of African American Honors Programs (NAAHP) Conference, Jackson, MS on Oct 9-11, 2014.

Analysis of TMPRSS2:ERG fusion in conditionally reprogrammed prostate cancer cells;
Shannon Anderson, Jun Yeb Nam, Nancy Palechor-Ceron, Uttam Rasaily, Anil KC, Charlene Valdez, Jan K Blancato, *Department of Biological Sciences, Hampton University, Hampton, VA, 23668 and the Department of Oncology, Georgetown University Medical Center, Washington DC, 20057*

In addition, the students will have the opportunity to present their research at the Student Research Day at Hampton University and encouraged to present their research at the Student Research Day at Georgetown University in the spring of 2014.

INVENTIONS, PATENTS AND LICENSES - nothing to report

REPORTABLE OUTCOMES – nothing to report

OTHER ACHIEVEMENTS

Preliminary data generated by Ashton Green was used in a grant application to the DOD for an IDEA Award in prostate cancer.

REFERENCES – none

APPENDICES - none